Orco Reactive™ Dye Description, Storage, Handling, and Preparation

WARNING: Reactive dyes in general, especially MX-Series(dichlorotriazine) have been known to cause respiratory allergic reactions for some people who come in contact with the dye or airborne dye dust. It is necessary to wear a proper NIOSH Approved respirator when handling reactive dyes.

Description

Reactive dyes in general are a popular dyer's choice for cotton and rayon due to their excellent fastness properties and bright shade range. Many dyeing application methods can be used such as exhaust, continuous, package, jet dyeing, and printing. As a comparison to direct dyes, the washfastness properties of reactive dyes are greater but the dyeing cycle time is generally longer, which may be a concern if high fastness properties are not necessary.

Orco Reactive BF-Series™ reactive dyes are comprised of the vinyl sulfone and monochlorotriazine linking groups offering benefits of both the ORCO REACTIVE R-Series™ and ORCO REACTIVE I-Series™ reactive dyes, respectively. These are more stable to temperature, liquor-ratio, salt, and pH variations, thus providing excellent reproducibility. The **BF-Series™** reactive dye class can be dyed in conjunction with R-Series™ or I-Series™ dyes. Dyeing temperature can range between 140°F(60°C) and 175°F(80°C). However, maximum yield is obtained when dyed at 140°F(60°C).

Orco Reactive I-Series™ reactive dyes have monochlorotriazine linking groups and are generally dyed at 175°F(80°C). These offer excellent leveling properties as well as high-exhaustion characteristics making them suitable for medium and deep shades. This class is recommended for cellulose and polyester/cotton blends in exhaust dyeing.

Orco Reactive MX-Series™ reactive dyes have dichlorotriazine(DCT) linking groups which promote high substantivity for cellulosics. Because of their high reactivity, a lower dyeing temperature(70-120°F(20-50°C)) is required to promote fixation with the fiber and therefore lend themselves to cold pad-batch, continuous, and tie-dye applications.

Orco Reactive R-Series™ reactive dyes have vinyl sulfone linking groups which are typically dyed at 140°F(60°C). This reactive dye class is stable to acid hydrolysis, has excellent wash-off properties of unfixed dye, and is easy to strip. Applicable dyeing procedures are exhaust, continuous, cold pad-batch, and printing. A wide shade range and good economics, especially with blacks and navies, make this a very popular reactive dye class.

Rhode Island Division
65 Valley Street
East Providence, RI 02914
Tel: 800-556-6784
Tel: 401-434-3300
Fax: 401-438-8136

North Carolina Division
1015 Concord Parkway North
Concord, NC 28027
Tel: 800-783-6955
Tel: 704-786-1118
Fax: 704-786-2415

Shanghai Division
Tel: 021-56630119
Fax: 021-56329220

E: info@organicdye.com

www.organicdye.com

ISO 9001 Certified

Storage

Orco Reactive™ dyes should be kept in a cool, dry area and elevated so container is not in direct contact with the cold ground which may cause condensation and eventual caking of the dye. Reactive dyes, especially those dyed at lower temperature such as the **MX-Series**, should be stored where there is minimal humidity or moisture in the air. These dyes are reactive in these conditions and will begin to hydrolyze causing a weaker dye and potential dyeing problems. Each drum of dye should be spaced far enough away from each other to prevent cross-contamination when drum lids are removed and the dye is transferred. All dyes should be stored in a separate room from chemicals to avoid contamination from air-borne dye dust. Drum lids should be replaced immediately and sealed to prevent cross-contamination and minimize moisture buildup. Utensils used to remove the dye from the drum should be perfectly clean of any dirt, chemicals, or other dyes.

Handling

As with any dye or fine-particle material, the proper NIOSH-approved respiratory mask should be used when handling dyes. Operator should review Safety Data Sheet(SDS) and wear proper protective clothing allowing no direct skin contact.

Preparation

To make a reactive dye solution, first adjust pH of water to 6.5-7.0. To decrease pH use acetic acid 56% or monosodium phosphate. To increase pH, use soda ash. Add 0.02 ounces per gallon(0.15 gm/L) of sodium thiosulfate if water contains chorine. Slowly add **Orco Reactive™** dye to agitated water at a temperature between 70°F(20°C) - 140°F(60°C), except for **Orco Reactive MX-Series™** reactive dyes which are very unstable to higher temperatures. The water temperature in this case should not exceed 100°F(43°C). Temperature over 140°F for the **BF-**, **I-**, and **R-Series** reactives may initiate dye hydrolysis and cause reduced dye fixation and yield during dyeing. Amount of dye should be less than 1 lb/gal(~125gm/L). If solubility of dye is exceeded when making the dye solution, use 5-20% Urea in dye solution or padding bath. In case of hard water, use 0.067oz/gal(0.5gm/L) sodium hexametaphosphate. Agitate until all dye is in solution with water.
It is good common practice to pour dye solution through a fine-mesh screen before adding to the dye bath.

Shelf Life

The shelf-life of **Orco Reactive™** dyes in a sealed container is estimated at 5-8 years for powders and 1 year for liquids when stored in a cool, dry, and dark environment. For powder **MX-Series™**, the shelf life is 1-3 years.